

**TABLE 1—COMPARISON OF CALCULATED, SIMULATED, AND MEASURED VIA IMPEDANCE**

Diameter (mils)	14.5			12		
Distance from signal-via center to ground-via center (mils)	41	43	45	32	34	36
Calculated impedance ( $\Omega$ )	50.3	51.8	53.3	48.5	50.4	52.2
Simulated impedance ( $\Omega$ )	51.2	52	52.1	51.5	51.6	51.6
Measured impedance ( $\Omega$ )	52	54	55	50	51	53